Amendment to the Claims:

This listing of claims replaces, without prejudice, all previous versions and listings of claims in the application.

Claims 1-48 (Canceled).

49. (Currently amended) Method for assessing the integrity of a structure, comprising the steps of:

i) collecting data relating to initial dimensions of the structure,

ii) creating a computer model of the structure using the results of step i),

iii) collecting data relating to an estimated load on the structure,

iv) analyzing the structure, using the computer model of the structure and the load data, in order to define high stress areas, in which areas of the structure future problems can be expected,

v) installing, in the high stress areas, a first set of sensors for measuring the dimensions of the structure in said high stress areas,

vi) measuring, after a time interval, dimensions of the structure in the high stress areas,

vii) updating the computer model of the structure, using the results of step vi),

viii) installing, in the high stress areas, a second set of sensors for measuring the load on the structure in said high stress areas,

ix) measuring the actual load on the structure,

x) updating the data relating to the load on the structure, and thereafter,

xi) re-analyzing the structure, using the updated computer model and the updated load data, in order to calculate a value for the integrity of the structure.

50. (Previously presented) Method according to Claim 49, further comprising repeating one or more times steps vi), vii), ix), x) and xi).

51. (Previously presented) Method according to Claim 49, further comprising visualizing the results of step xi).

52. (Currently amended) Method according to Claim 49, wherein the sensors are connected to a ~~processing means, such as a computer~~ processor, for transmitting data from the sensors to the processing means in real time.

53. (Previously presented) Method according to Claim 49, further comprising, prior to step iv), collecting data relating to known defects of the structure and thereafter using said defect-data, the computer model of the structure and the load-data for defining areas which are subject to relatively high loads.

54. (Previously presented) Method according to claim 49, further comprising, prior to step iv), estimating a minimum size of defects in the structure and thereafter using said estimated defect-data, the computer model of the structure and the load-data for defining areas which are subject to relatively high loads.

55. (Previously presented) Method according to Claim 54, wherein the minimum size of the defects is estimated to be equal to the precision of measurement equipment used for measuring the dimensions of the structure.

56. (Previously presented) Method according to claim 49, further comprising, prior to step iv), collecting data relating to a load-history of the structure and thereafter using said load-history, the computer model of the structure and the load-data for defining areas which are subject to relatively high loads.

57. (Currently amended) System for assessing the integrity of a structure, provided with ~~processing means, such as a computer~~ a processor, for containing a computer model of the structure to be analyzed and for using data relating to ~~the~~ a load on the structure in the computer model in a calculation of a value representing the integrity of the structure, wherein the system is provided with first sensors to measure data relating to the dimensions of the structure in high stress areas in which areas of the structure future problems can be expected and second sensors to measure the load on the structure in said high stress areas, the sensors being connected to a data logger connected to the processing means for transmitting said load and dimension data in

real-time to the processing means and wherein the processing means are adapted to update the computer model of the structure and to recalculate in the computer model a value representing the integrity of the structure, using said load and dimension data.

58. (Previously presented) System according to Claim 57, wherein the processing arrangement is provided with representation means for visualizing the result of the calculation of the value representing the integrity of the structure.

59. (Currently amended) System according to Claim 57, wherein the second sensors are adapted to measure pressure exerted on the structure.

60. (Currently amended) System according to Claim 57, wherein the second sensors are adapted to measure temperature.

61. (Currently amended) System according to Claim 57, wherein the second sensors are adapted to measure mechanical loading on the structure.

62. (Currently amended) System according to Claim 57, wherein the second sensors are adapted to measure fluid loading on the structure.

63. (Currently amended) System according to Claim 57, wherein the second sensors are adapted to measure vibration.

64. (Currently amended) System according to Claim 57, wherein the second sensors are adapted to measure acceleration experienced by the structure.

65. (Previously presented) A computer readable medium comprising a computer program comprising data and instructions to carry out the method according to Claim 49, when the computer program is executed on a computer system.

66. (Previously presented) A computer comprising a computer readable medium according to Claim 65.